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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/662,120      | 09/12/2003  | Jackson Lum          | 812-24              | 9091             |

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EXAMINER

CHEN, ALAN S

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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2182

DATE MAILED: 11/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                               |                              |  |
|------------------------------|-------------------------------|------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/662,120 | Applicant(s)<br>LUM, JACKSON |  |
|                              | Examiner<br>Alan S. Chen      | Art Unit<br>2182             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>#1 and 2</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 6 and 8, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Per claim 6, the term "substantially" is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Examiner will assume "substantially restrict airflow" simply to prevent *any* amount air from getting into the module. Examiner suggests using the language along the lines of "airtight".

4. Per claim 8, the terms "X units<sup>2</sup>" and "Y units<sup>3</sup>" in claim 8 renders the claim indefinite. The term "X units<sup>2</sup>" and "Y units<sup>3</sup>" is not exactly defined by the claim and are left as variables. While the applicant gives exact numbers in the specification for the values of X and Y, these are just demonstrable values that X and Y can be. Moreover, though applicant does indeed place some form of limit the values of X and Y such that X must be greater than Y, Examiner recommends simply claiming the surface area is required to greater than the volume rather than allude to fixed values "X" and "Y".

*Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7 and 9-15 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat. No. 6,532,152 to White et al. (White).

7. Per claim 1, White discloses a rugged computing module (Fig. 4; throughout the disclosure, White discloses ruggedized features of mobile computer, e.g., title, background, summary) comprising: a microcontroller (Column 5, lines 15-20; Fig. 7, element 102, "...central processing unit (CPU) such as a microprocessor or microcontroller for executing programs..."); flash memory (Fig. 1, element 106, auxiliary memory is stated as being flash based: Column 6, lines 27-40, "...auxiliary memory 106 may comprise a solid state disk drive which holds data in solid state devices (e.g., RAM) rather than in magnetic storage. The solid state disk drive may employ, for example, any rewritable nonvolatile memory such as EEPROM, flash memory, or the like..."), the flash memory being operatively coupled to the microcontroller (Fig. 1 clearly shows auxiliary memory, element 106, coupled to the central processing system), at least a portion of the flash memory being adapted for use as a substitute for disk drive storage area (Column 6, lines 27+ clearly indicate the solid state disk as a substitute for magnetic hard disk, e.g., one with a magnetic read head and disk), thereby eliminating moving parts in the computing module (by definition of solid state disk drive, there is no moving parts); and one interface port

Art Unit: 2182

(Fig. 1, element 124; Fig. 2, element 224 and 225; Fig. 7, element 228) operatively coupled to the microcontroller (Fig. 1, element 124 is coupled to the microcontroller, element 102 via bus 108), White disclosing the interface port could be and/or a Ethernet port (Column 9, lines 50-55), USB port (Column 9, lines 25-30), a serial port (Column 9, lines 15-25), a parallel port (Column 9, lines 15-25), a keyboard/mouse port (Column 9, lines 30-35) a SVGA or wireless port (Column 10, lines 25-35).

8. Per claim 2, White discloses claim 1, further comprising DRAM (Fig. 1, element 104 and Column 5, lines 49-55, "...main memory...semiconductor-based memory such as dynamic random access memory..." ) coupled to the microcontroller (Fig. 1, element 108 clearly shows main memory, element 104, coupled to the microcontroller, element 102). Note, Dynamic RAM by definition is volatile memory, e.g., once power is off, memory contents get erased.

9. Per claim 3, White discloses claim 1, further disclosing the ability to handle various optical drive and hard drive (Column 6, lines 15-25) which inherently use the IDE bus, e.g., hard drive interfaces are use IDE interface, also known as the ATA interface. Thus, by virtue of being able to attach to hard/optical disk drives, IDE industry bus standard is used.

10. Per claims 4-6 and 9, White discloses claim 1, further comprising a housing (Fig. 6) that encloses the computing module wherein the power supply is located external of the housing (Fig. 10, charger, e.g., the supplier of the power is located externally; Column 21, lines 19-30). The internal hardware (e.g., Figs. 7 and 8) have some restricted airflow, air blocked by the housing, only air circulating caused by the fan, element 724. Fig. 10 clearly shows the ability to mount the computer.

Art Unit: 2182

11. Per claims 10-15, White discloses claim 1, wherein the microcontroller inherently has a clock and an associated clock frequency as dictated in any digital processing device (Column 5, lines 20-30 disclose Intel's line of Pentium processors, all of which have associated clock frequencies) and the processor speed and amount of memory is designed for whatever application will be loaded onto the device. White further discloses being able to display the time and date (Column 7, lines 63-66). Tracking applications is an integral part of the computer system as noted in the built in GPS receiver (Fig. 8, element 720). Ruggedness is stated throughout Whites disclosure clearly indicative of the industrial applicability. Claim 15 has all the limitations of claim 1, further comprising the aforementioned.

12. Per claim 7, White discloses claim 4, wherein the housing is adapted to be used as a heat sink for the computing module (Column 31, lines 4-12, "...the metal heat sink may form part of the housing that houses the internal components of the portable computer...").

### *Claim Rejections - 35 USC § 103*

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 2182

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 16-19 are rejected under 35 USC 103(a) as being unpatentable over

White in view of US Pat. No. 6,243,263 to Kitahara.

White discloses claims 4 and 15. White discloses throughout his disclose the computing device as being rugged. White further suggests the housing being the heat sink, such that the heat sink is made out of a metallic substance (Column 31, lines 13-18).

White does not disclose expressly the housing being a die cast case and made out of zinc.

Kitahara discloses dissipative heat material being formed from diecast metal (particularly aluminum) because die case materials of this type have high heat conductivity (Column 2, lines 57-65) and are rugged.

White and Kitahara are analogous art because they are from the same field of endeavor in using heat sinks for portable devices (Kitahara uses it for laptops).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to use die cast case made out of a highly heat conductive material such as aluminum, zinc or nickel.

The suggestion/motivation for doing so would have been the high heat conductivity and ruggedness of this material, per Kitahara.

Therefore, it would have been obvious to combine White with Kitahara for the benefit of high heat conductivity and ruggedness of die cast metallic cases.

16. Claim 8 is rejected under 35 USC 103(a) as being unpatentable over White.

White discloses claims 4. White further *explicitly* discloses the desire to increase the surface area of the heat sink to expose the portable computer to more air (e.g., on the outside of the housing, Column 31, lines 20-30).

White does not disclose expressly the surface area of the rugged portable computer being greater than the volume of the computer.

At the time of the invention it would have been obvious to a person of ordinary skill in the art maximize the size of the surface area as much as possible, e.g., even beyond the volume measurement of the rugged computer of White.

The suggestion/motivation for doing so would have been to optimize the heat dissipation of the device, thus allowing for very high performance internal hardware that may generate a lot of heat, such to prevent overheating of any hardware component.

Therefore, it would have been obvious to maximize the surface area of the device as much as possible, even beyond the volume of the device, in order to dissipate as much heat as possible.

### *Conclusion*

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patents and patent related publications are cited in the Notice of References Cited (Form PTO-892) attached to this action to further show the state of the art with respect to rugged portable computer systems as well as heat dissipation material.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 8:30am - 5:30pm.

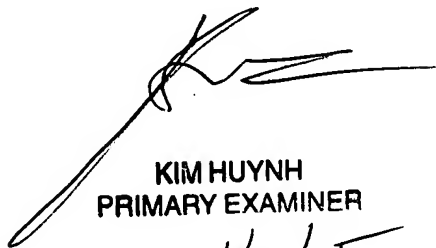


Art Unit: 2182

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on (571) 272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASC  
11/3/2005



**KIM HUYNH**  
**PRIMARY EXAMINER**  
11/07/05